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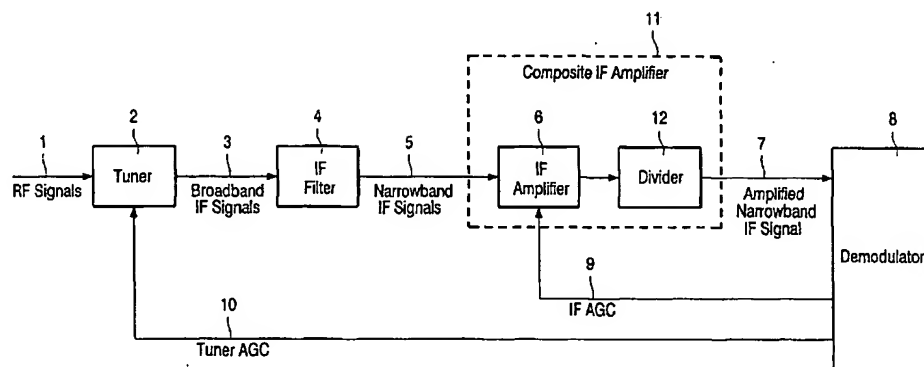
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(54) Title: FRONT-END SENSITIVITY BOOSTER



(57) Abstract: The invention relates to a method for increasing the sensitivity of a chain of amplifiers that comprises the steps of amplifying a signal by means of a first amplifier with a gain factor  $A_1 = A_{1,m} \cdot \Delta A_1$ , where  $A_{1,m}$  denotes a constant gain factor and  $\Delta A_1$  denotes a gain factor variation with  $1 \leq \Delta A_{1,min} \leq \Delta A_1 \leq \Delta A_{1,max}$ , further amplifying the signal by means of a second amplifier with a controllable gain factor  $A_2 \leq A_{2,max}$ , where variations  $\Delta A_1$  of the gain of the first amplifier are compensated by reducing the gain  $A_2$  of the second amplifier, so that the difference between the chain gain factor  $A_C = A_1 \cdot A_2$  and a target chain gain factor  $A_T \leq A_{T,max}$  becomes zero. To solve the object of the invention to provide a method for increasing the sensitivity of a chain of amplifiers that suffers from gain factor variations, it is proposed that the signal at the output of the second amplifier is additionally fed into a divider that applies a fixed factor  $A_3 \leq 1$  to its input, that variations  $\Delta A_1$  of the gain factor  $A_1$  of the first amplifier as well as the fixed factor  $A_3$  are at least partially compensated by the gain factor  $A_2$  of the second amplifier, so that the difference between the chain gain factor  $A_C' = A_1 \cdot A_2 \cdot A_3$  and the target chain gain factor  $A_T$  becomes minimum, and that the fixed factor  $A_3$  is chosen so that there exist at least some combinations of values  $\Delta A_1$  and  $A_T$  for which said difference can be forced to zero, and some combinations of values  $\Delta A_1$  and  $A_T$ , for which said difference can no longer be forced to zero due to the limitation  $A_2 \leq A_{2,max}$ . The invention further relates to a device for increasing the sensitivity of a chain of amplifiers.

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H03G H03F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 838 896 A (NIPPON ELECTRIC CO) 29 April 1998 (1998-04-29) cited in the application abstract column 7, line 32 - column 12, line 44; figure 5	1-10
A	EP 0 797 299 A (NIPPON ELECTRIC CO) 24 September 1997 (1997-09-24) abstract column 4, line 30 - column 5, line 32; figure 1 column 5, line 37 - column 7, line 50; figures 2,3 column 11, line 46 - column 12, line 3; figures 7A,7B	1-10
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☒ Further documents are listed in the continuation of box C.

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